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STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

STEVE COWPER, GOVERNOR

(907)452-1714

April 16, 1987

Northern Regional Office
P. O. Box 1601
Fairbanks, Alaska 99707

APR 20 1987

Mr. Alvin L. Ewing
Assistant Regional Administrator
U.S. Environmental Protection Agency
Alaska Operations Office
701 C Street, Box 19
Anchorage, Alaska 99513

Dear Mr. Ewing:

Enclosed with this letter are a copy of the report, Refinery Process Waste Water Details, and a portion of the report, Engineering Plan for Short Term Disposal of Refinery Process Waste Water, both prepared by MAPCO, Alaska Petroleum, Inc. for DEC and the City of North Pole Unfortunately, these reports were not available prior to completion of the RCRA hazardous waste inpection report for the North Pole Refinery but they may be useful nevertheless. By way of this letter, I have also distributed copies of these reports to the people listed below.

Please contact me if you or your staff have any questions on this material.

Sincerely,

Jeff Mach
Environmental Field Officer

JM.deb
Enclosures
cc: Dixon McClary, EPA/Region X, Seattle
Bill Adams, EPA/Region X, Seattle
Glenn Miller, ADEC/Juneau
100.23.016

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REVISION

MAPCO ALASKA
PETROLEUM, INC.

1100 H&H LANE

NORTH POLE, ALASKA 99705

REFINERY PROCESS WASTE WATER DETAILS

PREPARED
FOR

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
MR. LARRY DIETRICK, NORTHERN REGIONAL OFFICE SUPERVISOR

AND

CITY OF NORTH POLE, ALASKA
HONORABLE CARLETA LEWIS, MAYOR

MARCH, 1987

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SECTION

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MAPCO PETROLEUM INC.
1100 H &H LANE,
NORTH POLE, ALASKA 99705
(907) 488-2741

LETTER OF INTRODUCTION

March 26, 1987

To Whom It May Concern:

We at MAPCO ALASKA PETROLEUM Inc. would like to thank Alaska Department of Environmental Conservation, Environmental Protection Agency and the City of North Pole for meeting with us and our retained consultant.

MAPCO is committed to comply with all EPA and ADEC regulations in treatment and disposal of process waste water. The information contained within this document is evidence of our commitment.

The purpose of our meeting today is to discuss and determine what is necessary to meet all requirements for pre-treatment and disposal of plant process waste water.

Sincerely,

MAPCO ALASKA PETROLEUM Inc.

G. E. Fritz
General Manager

GEF:jw

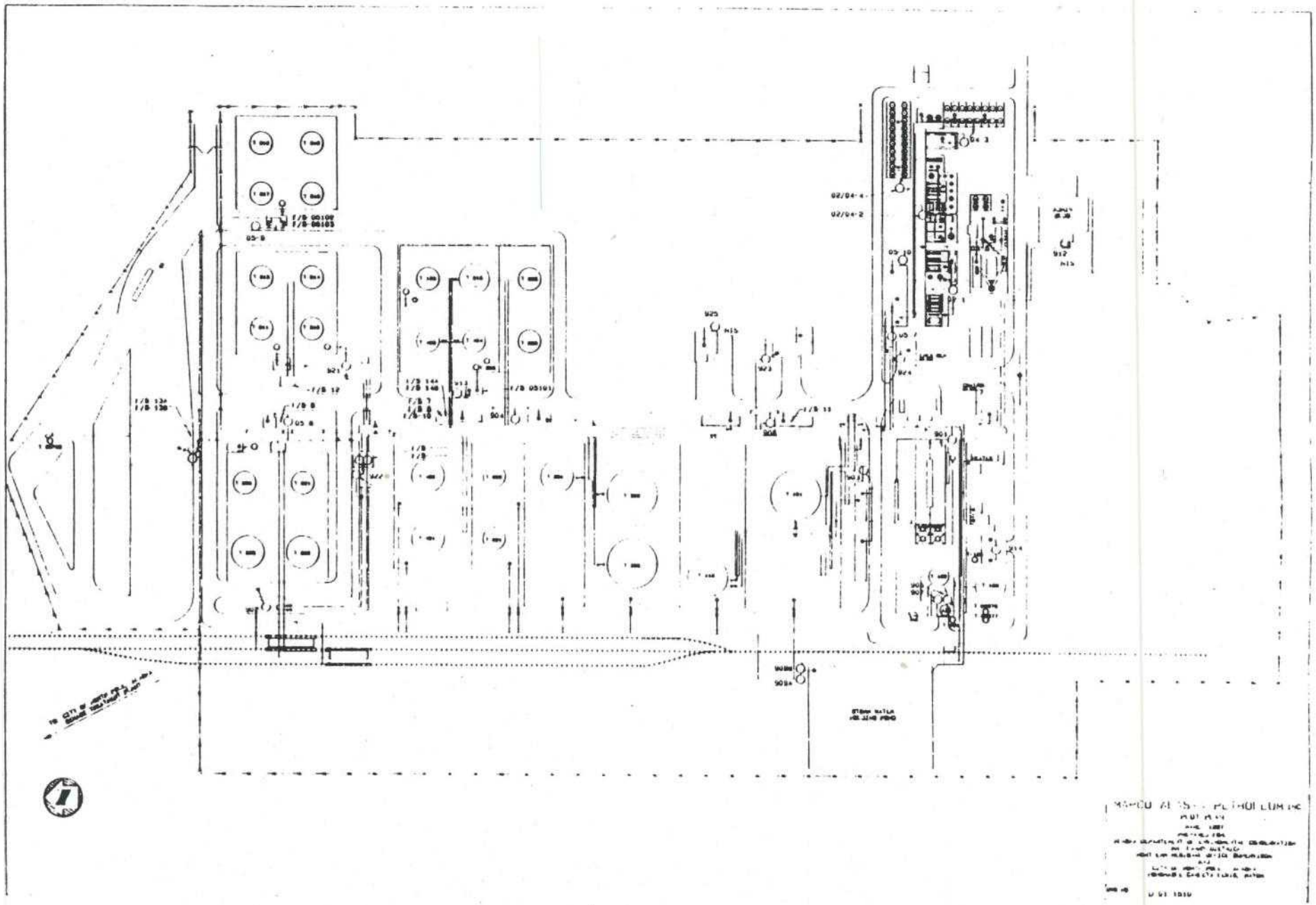
SECTION 2

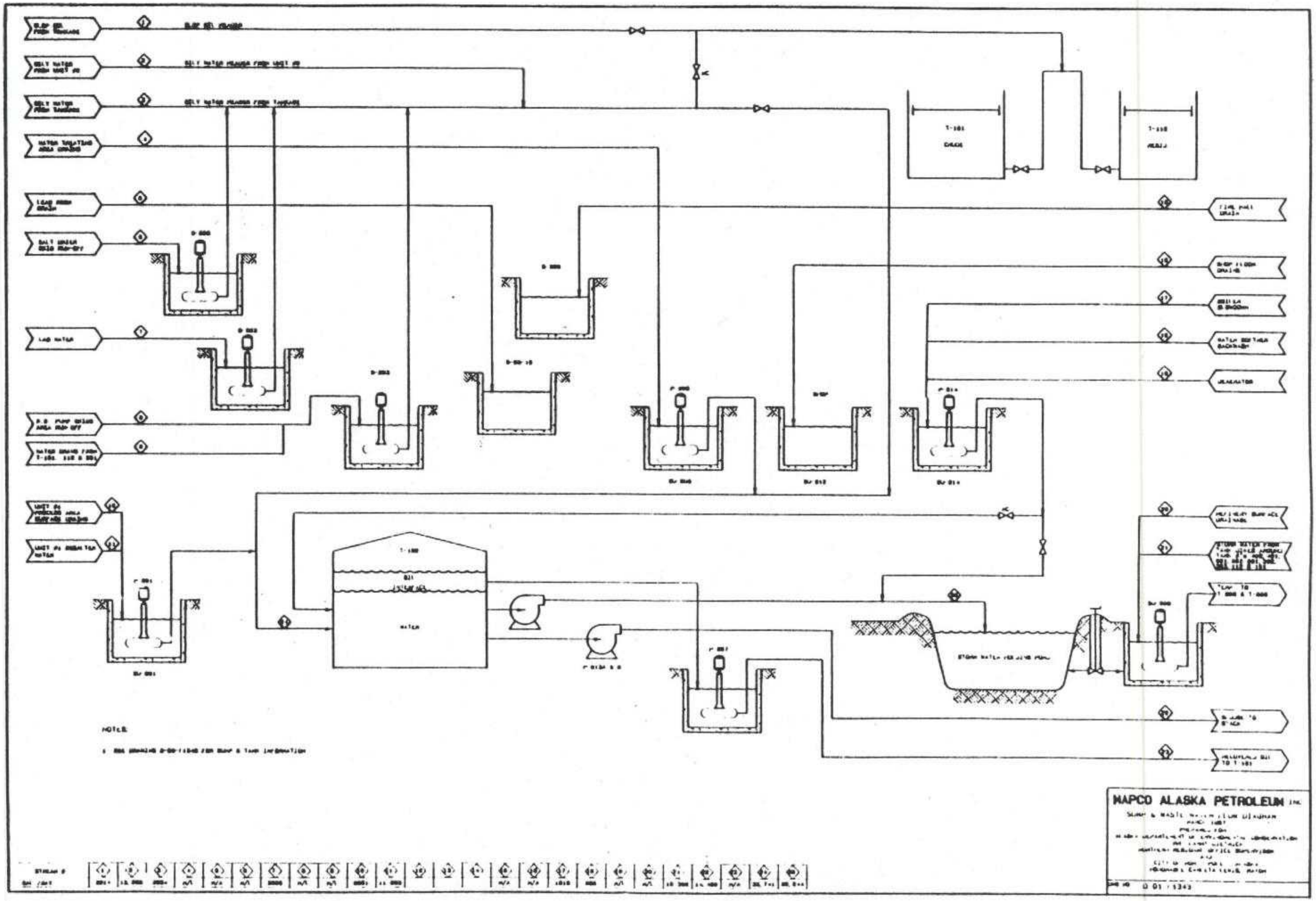
	SUMP NO.	PUMP NO.	PIT DEPTH	PIPING PLAN	DETAIL PLAN	PUMP MODEL	SIZE	IMP DIA	GPM / HD	MOTOR NO	H P	RPM	LINED Y	N	
CRUDE UNIT SUMP	02-1	05101	8'	D-02-P1003	D 02/04 C1021 SHT 1&2	GOULDS 3171	2.5 X 3 X 8S	7.75	265/53	- -	7.5	1800	X		
CRUDE/SULFOLANE	02/04-2	05102	8'	D-02-P1015				7.75	265/53		7.5	1800	X		
HOT OIL/COOLING KERO	04-3	05103	8'	D-02-P1011				7.75	265/53		7.5	1800	X		
COOLING KERO	02/04-4	05106	8'	D-04-P1013				7.75	265/53		7.5	1800	X		
ASPHALT UNIT	03-6	05111	8'	D-03-P1002				7.75	265/53	CM-1858	7.5	1800	X		
BLENDING BUILDING	05-7	05107	10'	D-05-P1057				7.75	265/53		7.5	1800	X		
ASPHALT PUMP SKID	05-8	05104	8'	D-05-P1010			1.5 X 3 X 13	11"	100/122		10	1800	X		
GAS LOADING PUMP SKID	05-9	05105	8'	D-05-P1040			1.5 X 3 X 13	11"	100/122		10	1800	X		
LEAD INJECTION SUMP	05-10	NONE	8'	D-05-P1201		NONE	NONE	NONE	NONE		NONE	NONE	X		
PROCESS AREA	901		8.17'	00-D-15064	SK B 14015	GOULDS 3171	2.5 X 3 X 8S	6.75"	175/40	CM-1468	5	1800	X		
OLD TRUCK RACK	902		7.13'	00-D-15025			1.5 X 3 X 13M	11"	100/122	CM-1469	10	1800	X		
TANK AREA #1 CHGS SKID	903		6'	D-05-P1071			2.5 X 3 X 8S	8.125"	100/70	CM-1470	7.5	1800	X		
TANK AREA #2 SKID 5	904		6'	D-05-P3019			1.25 X 1.5 X 8S	8.125"	50/50	CM-1471	2	1800	X		
EFFLUENT BLDG WATER (S)	905		6'	00-D-15085			1.25 X 1.5 X 8S	8.125"	50/50	CM-1501	2	1800		X	
EFFLUENT BLDG OIL (N)	907		6'	00-D-15085			1 X 1.5 X 6ST	4.875"	25/92	CM-1473	3	3600		X	
SALT DRIER SKID	908		6'	79086-A1-S169-P			1.25 X 1.5 X 8S	8.125"	50/50	CM-1474	2	1800	X		
STORM WATER TREATMENT	909A/B		18'	00-D-15075			4 X 6 X 11M	6.750"	50/50		2	1800		X	
TANK FRM AREA#4 (T504)	913			D-05-P1089	D-05-P1035							1800	X		
UTILITY BLDG	914		6'	D-05-P1098			1.5 X 2 X 11S	9.3125"	50/50		2	1800		X	
SERVICE BLDG	912			00-D-15093			1.25 X 1.5 X 8S	8.125"	50/50		2	1800		X	NIS
TANK AREA #3 (T-510)	921						1.25 X 1.5 X 8S	8"	50/50	CM-1486	2	1800	X		
OLD MLM LOADING	922			TANKAGE - 014	D-05-P1035					CM-1472		1800	X		
LAB AREA	923		19'				1.25 X 1.5 X 8S						X		
GENERATOR BLDG	924						1 X 1.5 X 8S	8"					X		
FIRE STATION SUMP	925												X		NIS

TANK NO	PRODUCT	CAPACITY / BBL	CAPACITY / GAL	DIAM & HT	FILL HT	BBL/FT	GAL/FT
101	CRUDE	55,100	2,314,200	102 X 41'9"	38'6"	1454	61,068
112	RESID	27,700	1,163,400	65'6" X 50'	46'6"	595	24,990
189	FIREWATER	18,150	762,300	60' X 40'	38'0"	504	21,168
190	GLYCOL	360	15,120	12' X 19'5"	18'0"	19.8	831.6
191	POUR POINT DEP	686	28,812	12' X 32'2"	34'0"	20.8	873.6
192	OILY WATER	4,680	196,560	39' X 24'	22'6"	204	8568
193	ALCOHOL	3000	126,000	24' X 32'			
201	KERO FLUSH						
302	KEROSENE	58,160	2,442,720	102' X 41'9"	40'0"	1454	61,068
303	KEROSENE						
401	LAGO	19,100	802,200	60' X 40'	38'0"	504	21,168
402	LAGO	19,100	802,200	60' X 40'	35'0"	504	21,168
403	LAGO	9,495	398,790	55' X 24'	22'6"	422	17,724
404	LAGO	9,495	398,790	55' X 24'	22'6"	422	17,724
501	JP-4	9,485	398,370	44' X 37'6"	35'0"	271	11,382
502	JP-4	9,485	398,370	44' X 37'6"	35'0"	271	11,382
505	FSII	385	16,170	12' X 30'6"	30'6"	12.6	529.2
510	JP-4	9,485	398,370	44' X 37'6"	35'0"	271	11,382
511	JP-4	9,485	398,370	44' X 37'6"	35'0"	271	11,382
513	JP-4	9,485	398,370	44' X 37'6"	35'0"	269	11,298
514	JP-4	9,485	398,370	44' X 37'6"	35'0"	269	11,298
515	JP-4	18,956	796,152	60' X 44'1"	37'10"	503	21,126
616	GASOLINE	9,630	404,460	49' X 32'	30'	321	13,482
617	GASOLINE	9,630	404,460	49' X 32'	30'	321	13,482
618	GASOLINE	9,630	404,460	49' X 32'	30'	321	13,482
619	GASOLINE	9,630	404,460	49' X 32'	30'	321	13,482
820	ASPHALT AC 2.5	9,566	401,772	46' X 35'8"	34'2"	280	11,760
821	ASPHALT AC 2.5	9,566	401,772	46' X 35'8"	34'2"	280	11,760
822	ASPHALT AC 5.0						
823	ASPHALT AC 2.5-5.0						
901	HAGO	23,900	1,003,800	67' X 40'	38'0"	628	26,376
05576	NALCO-5541	10,000 GAL	10,000	11' X 14'			
05577	NALCO-5596	10,000 GAL	10,000	11' X 14'			
05758	ASPH ADDIT	10,000 GAL	10,000	11' X 14'			

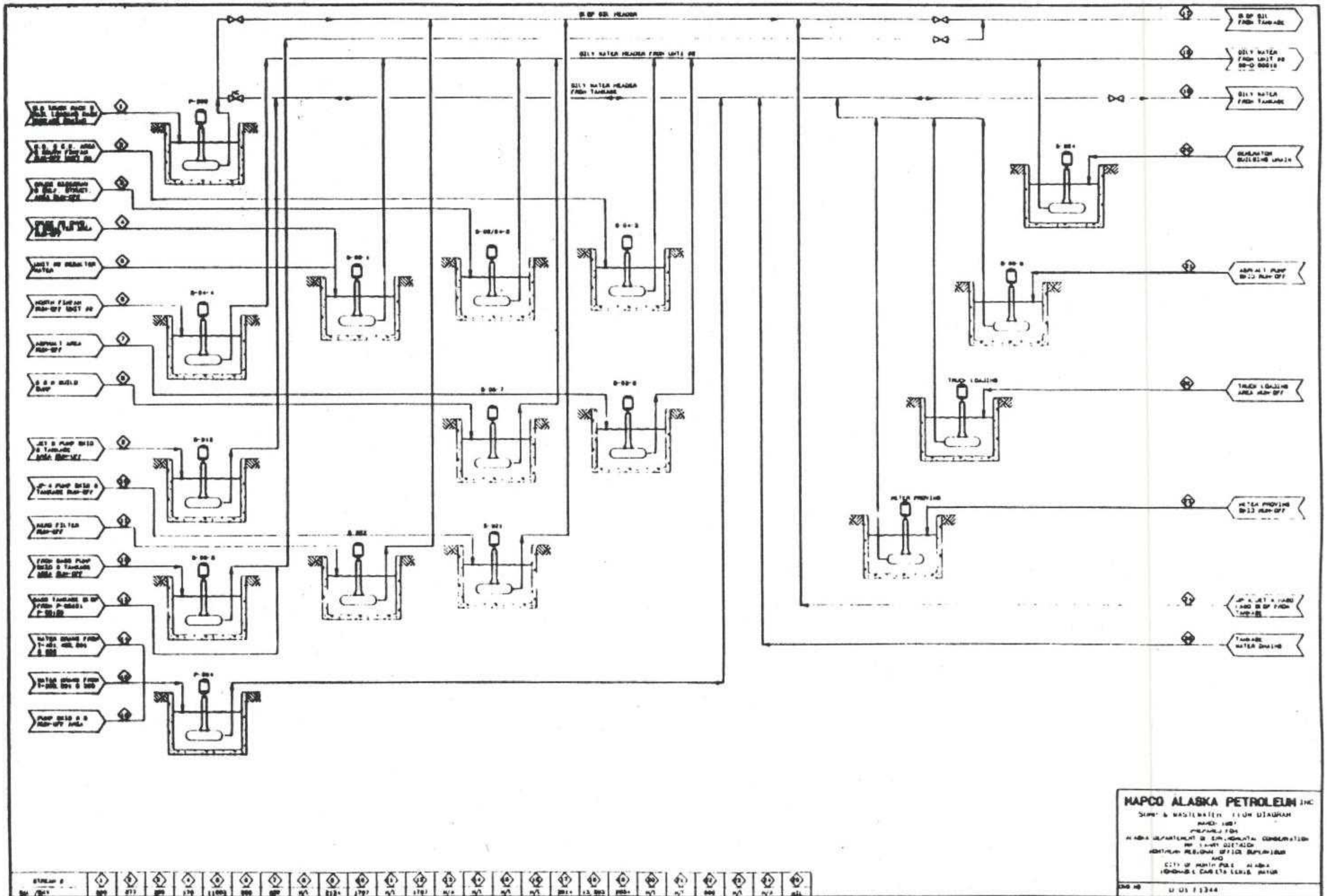
MAPCO ALASKA PETROLEUM INC.
SUPPLEMENTAL MATERIAL BALANCE DATA
FOR WASTE WATER STREAMS
[illegible]
PREPARED FOR
[illegible]
AND
CITY OF NORTH POLE, ALASKA
[illegible]

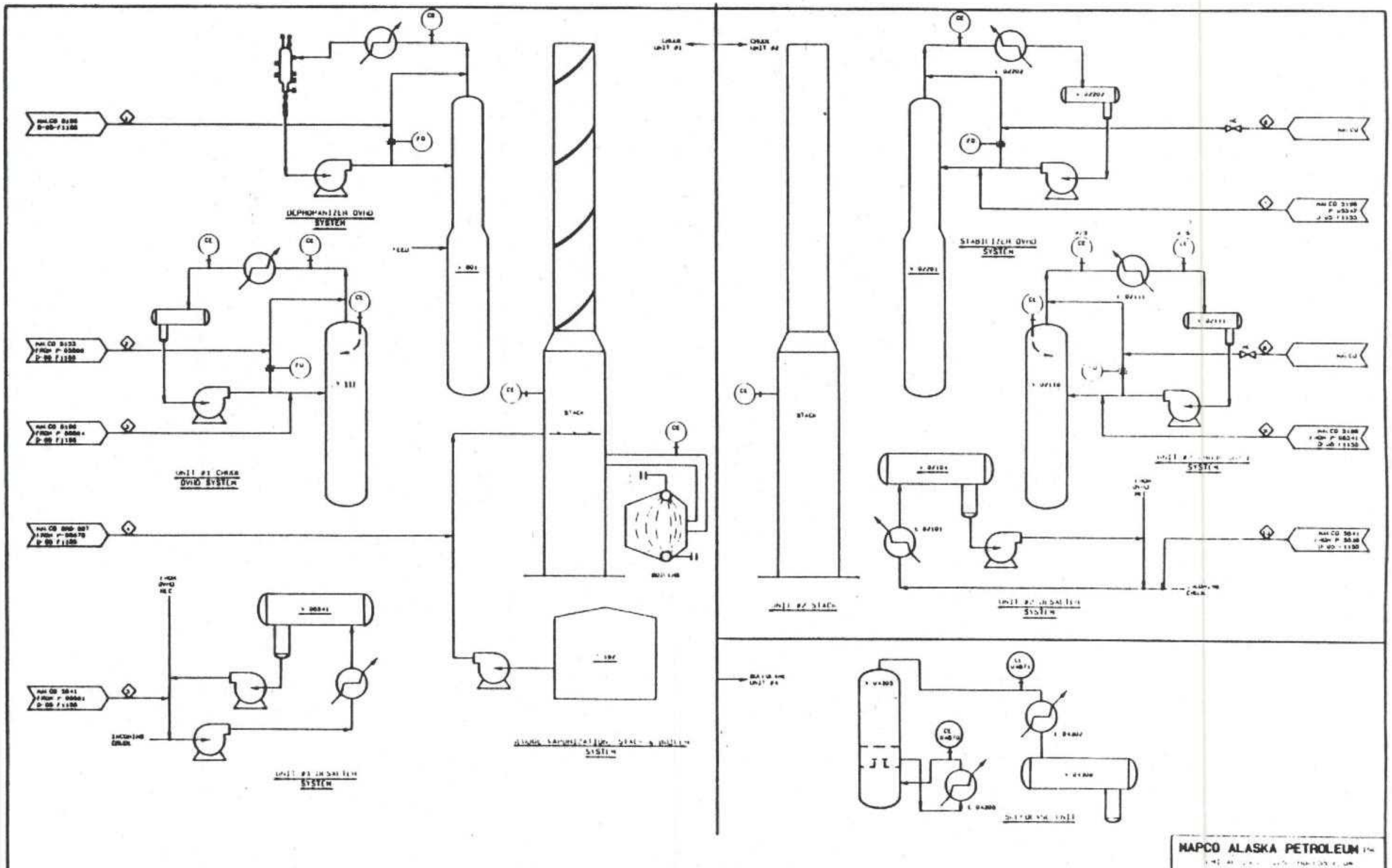
DWG NO D-05-1348





MAPCO ALASKA PETROLEUM INC.
SUMP & WASTE WATER FLOW DIAGRAM
D 01 - 1343


OILY WATER HEADER FROM UNIT #2
OILY WATER HEADER FROM TANKAGE
OILY WATER FROM TANKAGE
TANKAGE WATER DRAINS
TRUCK LOADING
METER PROVING
MAPCO ALASKA PETROLEUM INC
SUMP & WASTEWATER FLOW DIAGRAM
PREPARED FOR
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND
CITY OF NORTH POLE ALASKA



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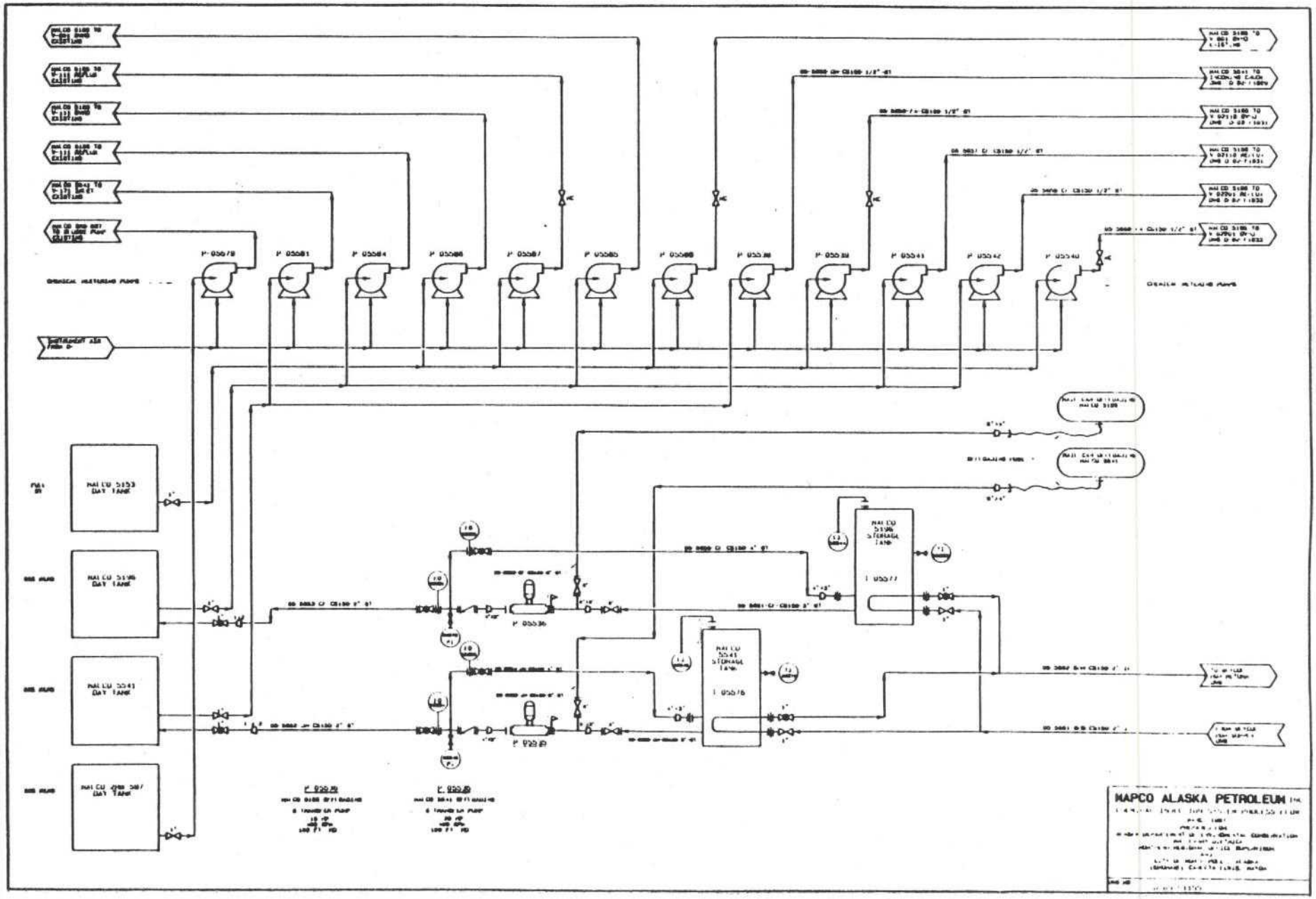
GPD	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	
CHEM (NALCO)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	
CHEM PUMP(S)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	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NAI CO 5196 DAY TANK
NAI CO 5041 DAY TANK
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P 05035
MAPCO ALASKA PETROLEUM INC.

SECTION

3

MAPCO PETROLEUM, INC.
NORTH POLE REFINERY LAGOON AND STORAGE TANK WASTEWATER ANALYSES
Sample Date: February 10, 1987

PARAMETERS	UNITS	ID#: / Time:	LAGOON Ice 021187-5 1345	LAGOON Liquid 021187-1 1310	LAGOON Sludge 021187-2 1345	TANK 508 Ice 021187-7 1600	TANK 508 Liquid 021187-4 1645	TANK 509 Ice 021187-6 1430	TANK 509 Liquid 021187-3 1550	QUALITY CONTROL DATA METHOD †	QC Standard	Result	True V (Ra
FIELD MEASUREMENTS:				Top/Bottom									
Color			Grey	Clear/Dark	Black	Clear	Black	Clear	Green	Observation			
Conductivity (field)	µmhos/cm			6000/6000	6000		2100		1500	YSI Conductivity/Salinity/Temperature Meter			
Dissolved Oxygen	mg/L			0.2/0.2	<0.1		<0.3		<0.3	YSI Dissolved Oxygen Meter			
Ice Thickness	Inches		18			31.5		34.5		Tape Measure			
Odor				"Sweet"	"Septic"		"Fuel"		"Fuel"	Observation			
pH	pH Units			10.1/8.4	8.4		7.3		7.7	Hanna Instruments "pH Pen"			
Salinity	‰			6.0/6.0	6.0		2.1		1.5	YSI Conductivity/Salinity/Temperature Meter			
Sample Depth	Feet			1.5/6.0	7.0		22		22	Tape Measure			
Temperature	°C			0.0/3.5	3.5		0.0		0.0	YSI Conductivity/Salinity/Temperature Meter			
LABORATORY ANALYSES:													
BOD5, Soluble	mg/L		33	290	220	40	220	6.0	18	SM 209C/507 (F) ††			
BOD5, Total	mg/L		38	290	2160	53	300	7.0	18	SM 507			
COD, Soluble	mg/L		250	1200	1220	175	1250	75	475	SM 209C/508 (F)			
COD, Total	mg/L		325	5350	16800	185	5750	100	475	SM 508			
Total Solids	mg/L		1530	7040	16100	1000	7220	362	3790	SM 209A			
Total Volatile Solids	mg/L		128	766	4280	154	684	137	375	SM 209D			
Total Suspended Solids	mg/L		13	14	11700	8.7	26	8.0	18	SM 209C (F)			
Volatile Suspended Solids	mg/L		7.3	8.3	4120	6.7	20	5.3	15	SM 209D (F)			
Total Dissolved Solids	mg/L		1517	7026	4400	991.3	7194	354	3772	By Calculation			
Volatile Dissolved Solids	mg/L		121	758	160	147	664	132	360	By Calculation			
Alkalinity (as CaCO3)	mg/L		140	610	990	120	680	44	440	EPA 310.1	EPA 384-2	17.5	(14.5 - 2
Ammonia	mg/L		1.9	11	25	1.1	8.3	<0.1	2.9	SM 417A & D			
Chloride	mg/L		745	3190	3370	488	3240	177	1750	EPA 325.3 (F)	EPA 384-2	11.1	(9.8 - 1
Conductivity (lab)	µmhos/cm		3200	6000	6200	1950	6500	740	3500	EPA 120.1			
Cyanide	mg/L			<0.01	<0.01		<0.01		<0.01	SM 412B & D	EPA WP179	0.238	(0.155 - 0.2
Nitrate	mg/L			<0.1	<0.1		<0.1		<0.1	EPA 352.1 (F)	EPA 384-2	0.15	(0.10 - 0
Nitrite	mg/L			<0.01	0.01		1.2		<0.01	EPA 354.1 (F)			
Oil & Grease, Total	mg/L		64	11	65 *	8.7	7.8	2.5	2.7	SM 503B	EPA WP379	21.1	(8.8 - 2
Oil & Grease, Floatable	mg/L		18							SM 206B †††			
pH (lab)	Units @ °C		7.9 @ 14	8.5 @ 14	8.3 @ 17	7.6 @ 18	7.3 @ 16	7.6 @ 18	7.5 @ 13	SM 423			
Phenols	mg/L			2.9	3.1		3.2		0.13	EPA 420.1	EPA 179.6	0.039	0.(
Phosphate, Total	mg/L		0.30	0.76	1.1	0.14	0.72	<0.10	0.34	SM 424F (F)	EPA 284.8	1.06	(1.05 - 1
Silica	mg/L		16	34	32	9.0	46	6.4	36	SM 425C (F)			
Sulfate	mg/L		19.1	89	70	<1.0	5.8	1.0	18.5	EPA 375.4 (F)	EPA 384-2	6.7	(4.49 - 9

Sulfide	mg/L		0.17	120		0.15		1.3	Electrode			
Metals:												
Arsenic	mg/L	<0.001	0.004	0.076	<0.001	0.007	<0.001	0.008	EPA 206.2	EPA 284-1	0.032	(0.020 - 0
Calcium	mg/L	40.0	170	906	17.5	118	2.92	52.6	EPA 215.1	EPA 384-2	4.85	(4.52 -
Cadmium	mg/L	0.005	0.008	0.064	0.021	0.011	0.006	0.005	EPA 213.1	EPA 284-2	0.039	(0.031 - 0
Chromium, Hexavalent	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	EPA 218.4	EPA 284-2	0.237	(0.209 - 0
Chromium, Total	mg/L	<0.01	<0.01	0.23	<0.01	<0.01	<0.01	<0.01	EPA 218.1	EPA 284-2	0.241	(0.209 - 0
Copper	mg/L	0.04	<0.02	1.5	<0.02	<0.02	<0.02	<0.02	EPA 220.1	EPA 284-2	0.360	(0.302 - 0
Iron	mg/L	2.62	1.44	679	0.95	2.58	0.24	0.64	EPA 236.1	EPA 284-2	0.859	(0.695 - 0
Lead	mg/L	0.016	0.002	1.19	0.002	0.003	0.004	0.001	EPA 239.2	EPA 284-1	0.052	(0.034 - 0
Mercury	mg/L	0.0012	<0.0002	0.0081	0.0012	<0.0002	0.0006	<0.0002	EPA 245.1	EPA 378-14	0.0039	(0.0032 - 0.0
Magnesium	mg/L	10.3	37.1	107	6.86	42.7	3.96	32.6	EPA 242.1	EPA 384-2	0.192	(0.137 - 0
Manganese	mg/L	0.284	0.838	12.4	0.751	2.05	0.052	0.411	EPA 243.1	EPA 284-2	0.311	(0.304 - 0
Potassium	mg/L	7.58	25.0	42.4	5.78	31.4	2.10	13.6	EPA 258.1	EPA 384-2	2.32	(1.70 -
Sodium	mg/L	1110	1810	1850	955	2350	780	1540	EPA 273.1	EPA 384-2	0.828	(0.727 - 0
Selenium	mg/L	<0.002	0.003	0.008	<0.002	0.006	0.004	0.004	EPA 270.2	EPA 284-1	0.011	(0.007 - 0
Silver	mg/L	0.01	0.01	0.04	0.05	0.01	<0.01	<0.01	EPA 272.1	EPA 378-14	0.029	(0.021 - 0
Zinc	mg/L	1.14	0.080	10.4	0.150	0.142	0.182	0.055	EPA 289.1	EPA 284-2	0.423	(0.381 - 0
Purgeable Aromatics:									EPA 602/8020	Travel Blank		
Benzene	µg/L		2600	1.4		220		5.8		<0.2	5.3	
Chlorobenzene	µg/L		<10	<0.3		<20		<1.0		<0.2		
1,2-Dichlorobenzene	µg/L		<20	<0.5		<40		<2.0		<0.4	5.0	
1,3-Dichlorobenzene	µg/L		<20	<0.5		<40		<2.0		<0.4	5.3	
1,4-Dichlorobenzene	µg/L		<15	<0.4		<30		<1.5		<0.3	4.2	
Ethylbenzene	µg/L		160	<0.3		100		<1.0		<0.2	4.4	
Toluene	µg/L		1700	0.73		770		2.6		<0.2	4.6	
Xylenes	µg/L		680	<0.3		440		1.0		<0.2		

* Formed a very stable emulsion, value may be low.

† SM = Standard Methods, 16th Edition; EPA = EPA Methods for Chemical Analysis of Water & Wastes.

†† (F) = Filtered through a glass fiber (suspended solids) filter prior to analysis.

††† Modified Method.

Field measurements and samples were collected by Michael R. Pollen of Northern Testing Laboratories, Inc. and Michael Lecorchick of Shannon & Wilson, Inc.
Purgeable aromatics, cyanide, and grease & oil were run at Northern Testing Laboratories, Inc., Anchorage water quality laboratory.
All other laboratory analyses were run at Northern Testing Laboratories, Inc., Fairbanks water quality laboratory.

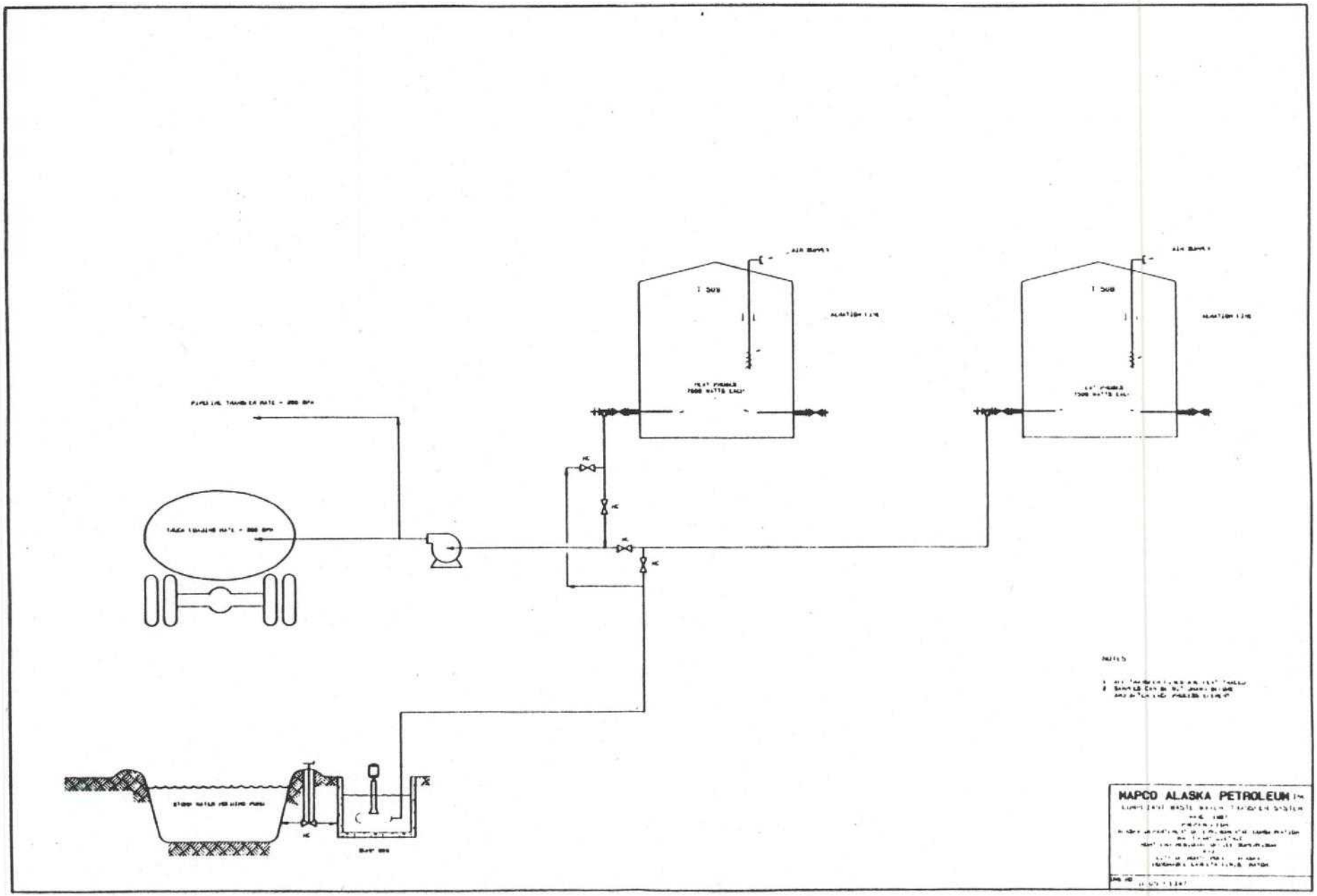
REPORTED BY:

Michael R. Pollen, President

DATE: February 26, 1987

SECTION

4


HAPCO ALASKA PETROLEUM INC.

SECTION 5

WASTE WATER DISPOSAL AGREEMENT

THIS AGREEMENT made and entered into this _____ day of March, 1987, by and between MAPCO PETROLEUM Inc., an Alaska corporation (hereinafter referred to as "MPI"), and the City of North Pole, Alaska (hereinafter referred to as the "City");

WITNESSETH:

WHEREAS, MPI owns and operates a petroleum refinery in North Pole, Alaska, and desires to dispose of its pre-treated waste water from said refinery; and

WHEREAS, the City operates a lagoon system treatment plant in North Pole, Alaska for the treatment and disposal of such waste water; and

WHEREAS, MPI desires to dispose of and City desires to accept MPI's pretreated waste water at City's lagoon system treatment plant in North Pole, Alaska;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter stated, the parties agree as follows:

1. Disposal of Waste Water. MPI shall pay to the City for the disposal by MPI of approximately 3,000,000 gallons of tested, pretreated waste water in accordance with the following rate schedule:

$3.10 per gallon for the first 1,000 gallons;

$2.75 per gallon for the next 25,000 gallons;

$2.20 per gallon for all gallons over the initial 26,000 gallons.

Actual gallons transferred shall be determined by MPI by tank strapping both before and immediately following the transfer. Payment for gallons transferred shall be made by MPI on a monthly basis for all waste water transferred to the City in the preceding month.

2. Disposal Procedures. MPI shall dispose of waste water presently stored in refinery tankage through the City's lagoon system treatment plant by way of truck or a temporary overland pipeline to be installed and maintained at MPI's expense.

3. Testing of Waste Water. Prior to initiating deliveries of waste water to the City, MPI shall obtain testing of samples of the pretreated waste water, and testing results shall be reviewed by the City advisor and Northern Testing Laboratories, Inc., or at MPI's option a similar outside consulting firm with experience in such testing procedures and interpretation of results. Upon completion of testing with favorable results, the waste water shall be transported by MPI to the City's lagoon area.

4. Compliance with Laws. In the treatment and disposal of its waste water, MPI shall comply with all applicable federal, state and local laws, rules and regulations, including but not limited to, regulations of the Environmental Protection Agency and the State of Alaska Department of Environmental Conservation.

5. Indemnification. MPI shall indemnify and hold harmless the City, its officers, representatives, agents or employees from and against any and all expenses, claims, damages or liabilities arising out of its storage, treatment or disposal of waste water prior to transfer of the same to the City, and the City shall indemnify and hold MPI, its affiliated companies and their officers, directors, employees, representatives and agents harmless from and against any and all expenses, claims, damages or liabilities arising out of its storage, treatment or disposal of the waste water after the transfer of the same to the City.

6. Representations and Warranties of MPI. MPI represents and warrants to the City as follows:

A. MAPCO PETROLEUM Inc. is a corporation, duly organized and existing and in good standing under the laws of the State of Alaska, and is duly authorized to conduct business in the State of Alaska.

B. MPI has full power to execute and perform this Agreement and to transfer the waste water as herein provided, and such execution and performance does not conflict with any provisions of its Articles of Incorporation or By-Laws, or with any contract to which it is a party or to which it is subject. The execution and delivery of this Agreement and all of the transactions provided for in this Agreement have been duly authorized by MPI and are and will be in all respects legally binding upon MPI.

7. Representations and Warranties of City. City represents and warrants to MPI as follows:

A. City is a municipality duly organized and existing under the laws of the State of Alaska and in accordance with the ordinances of the City of North Pole.

B. City has full power and authority to execute and perform this Agreement and its lagoon system treatment plant has full capacity to accommodate MPI as herein provided. The execution and performance of this Agreement does not conflict with any provisions of its City Charter, ordinances or with any contract to which it is a party or to which it is subject. The execution and delivery of this Agreement, and all transactions provided for in this Agreement, have been duly authorized by the City Council and are and will be, in all respects, legally binding upon the City.

8. Miscellaneous.

A. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. Notwithstanding the foregoing, neither party shall assign this Agreement in whole or in part, without the prior written consent of the other party.

B. This Agreement shall be construed according to the laws of the State of Alaska and the parties hereto agree to be subject to the jurisdiction of the State and Federal courts located therein.

C. All warranties, representations and agreements contained in this Agreement shall survive the execution and delivery of all documents required hereunder and the payment of all sums required hereunder.

D. Any notices, requests and demands relating to this Agreement shall be in writing and shall be deemed to have been duly given if personally delivered or if deposited in the United States mails, postage prepaid, return receipt requested, (1) if to MPI, at 1100 H & H Lane, North Pole, Alaska 99706, Attention: Gerald E. Fritz, or at such other address as MPI may have furnished to City in writing, or (2) if to City, at P.O. Box 55109, North Pole, Alaska 99705, Attention: Mayor of the City of North Pole, or such other address as the City may have furnished to MPI in writing.

E. The captions used herein are for convenience only and are not a part of this Agreement, and shall be disregarded for purposes of construction.

F. This Agreement may be executed in counterpart originals, each of which shall be deemed as original, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

"CITY"	"MPI"
City of North Pole, Alaska	MAPCO PETROLEUM Inc.
By _____	By _____
Carleta Lewis Mayor of the City of North Pole, Alaska	A. L. Wright, Jr. Vice President